

Translation

PATENT COOPERATION TREATY

PCT/EP2003/002507



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 0000053349	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/002507	International filing date (day/month/year) 12 March 2003 (12.03.2003)	Priority date (day/month/year) 14 March 2002 (14.03.2002)
International Patent Classification (IPC) or national classification and IPC G01N 21/88		
Applicant BASF AKTIENGESELLSCHAFT		

**CORRECTED
VERSION**

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>9</u> sheets, including this cover sheet. <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of <u>3</u> sheets.
3. This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 06 August 2003 (06.08.2003)	Date of completion of this report 14 June 2004 (14.06.2004)
Name and mailing address of the IPEA/EP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/002507

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages _____ 1-23 _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages _____ 1-17 _____, filed with the letter of _____ 14 January 2004 (14.01.2004)
- ☒ the drawings:
pages _____ 1/1 _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☒ the claims, Nos. _____ 18 _____
- ☐ the drawings, sheets/fig _____

5. ☒ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP 03/02507

I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

Continuation of I.5

The amendments submitted with the letter of 12 January 2004 introduce substantive matter which, contrary to PCT Article 34(2)(b), goes beyond the disclosure in the international application as filed. The amendment in question is that of claim 16 and concerns the provision of a storage container, whereas only a bottle, not a storage container, is mentioned in the original description (page 20, line 32 to page 21, line 5).

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP 03/02507

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-12, 16, 17	YES
	Claims	13-15	NO
Inventive step (IS)	Claims		YES
	Claims	1-12, 16, 17	NO
Industrial applicability (IA)	Claims	1-17	YES
	Claims		NO

2. Citations and explanations

- Reference is made to the following documents, also cited in the search report:

D1: DE-A-42 16 469 (Diehl GmbH & Co)
25 November 1993

D2: DE-A-44 26 783 (Horst Sommer Recycling)
9 February 1995

D3: EP-A-0 704 469 (BASF AG) 3 April 1996

D4: US-A-6 157 730 (Roever et al.) 5 December 2000

D5: DE-A-198 24 304 (Maass, Ruth) 2 December 1999.

D1, D3 and D5 were also mentioned in the application.

- Irrespective of the lack of clarity referred to in paragraph 4, the present application fails to meet the requirements of PCT Article 33(1) because the subject matter of claims 13-15 lacks novelty (PCT Article 33(2)) and the subject matter of claims 1-12, 16 and 17 does not involve an inventive step (PCT Article 33(3)).

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- 2.1 In comparison with the planar materials and the leather with a natural grain which are obtainable by means of the known retouching methods (for example, see the description of the present application, page 4, lines 38-44 and page 19, lines 25-33; or D2) the subject matter of claims 13-15 contains no new features.

The examiner advises that a product is rendered novel (or inventive) not merely because it is produced by a novel (or inventive) method but because the product *per se* contains novel (or inventive) features.

- 2.2 Document D1 discloses a method from which the subject matter of claim 1 differs in that the defect volumes are determined and that the defects in the form of cavities are retouched using a binding agent. The method disclosed in D1 includes the determination of the size of the defects and does not relate to any further retouching thereof.

The subject matter of claim 1 is therefore novel (PCT Article 33(2)).

Proceeding from D1, the problem addressed by the present invention has two separate aspects, namely (i) to propose an alternative to the classification method disclosed in document D1 and (ii) to modify the classification method disclosed in document D1 such that the quality of the materials can be enhanced.

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For the following reasons, the solution proposed in claim 1 of the present application cannot be regarded as inventive (PCT Article 33(3)):

- (i) it is generally known to a person skilled in the art that the volume of a defect is equivalent to the size of the defect (see also the present application, page 6, lines 34-36), the volume and size being interchangeable if required;
- (ii) as disclosed in the present application itself (see the description, page 4, lines 38-44; page 19, lines 25-33), the retouching of defects in planar materials (e.g. leather) using binding agents is already known (see also D2). The implementation of the retouching method following defect detection is also known.

A person skilled in the art would therefore consider combining defect detection with the known retouching method to be a conventional procedure. The subject matter of claim 1 is, in fact, similar to the conventional procedure whereby the defects are first detected and then corrected. In consequence, said claim does not involve an inventive step.

Document D2 discloses a method for enhancing planar materials, said method comprising the following steps:

- the preparation of a material;
- the detection of the surface of the material;
- and

- the use of binding agents to retouch defects which are in the form of cavities.

Therefore, the subject matter of claim 1 differs from this known method in that the surface of the material is detected optoelectronically and that the number and volume of the defects are determined.

Thus, the subject matter of claim 1 is novel (PCT Article 33(2)).

Proceeding from D2, the problem addressed by the present invention can be regarded as that of automating the first phase of the method by which the defects are classified.

For the following reason, the solution proposed in claim 1 of the present application cannot be regarded as inventive (PCT Article 33(3)):

The features whereby the surface of the material is opto-electronically detected and the number and size (or volume) of the defects are determined have already been used for the purpose of classification (see document D1). A person skilled in the art who wished to achieve the same end using a method as per document D1 could easily use these features to like effect. In this way, he would arrive at a method as per claim 1 without thereby being inventive.

- 2.3 Claims 2-12 are dependent on claim 1 and, hence, likewise satisfy the PCT requirement of novelty. However, dependent claims 2-12 contain no features

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which, in combination with the features of claim 1, to which they refer back, meet the PCT requirement of inventive step since the additional features of claims 2-12 are purely conventional.

- 2.4 Document D1 also discloses a device from which the subject matter of claim 16 differs in that one or more moveable units are provided, the sensor unit or sensor units being mounted thereupon; in that a supply of binding agent is provided (in a container); and in that a computer is available for controlling said device. According to D1, the sensor units are fixed whilst the surface to be inspected is movable and an evaluation device is provided, the output thereof being used for controlling a marking device or a sorting system.

The words "device for carrying out a method according to claims 1 to 5" merely denote a device that is suitable for carrying out said method. Since there is no reason why the device according to document D1 should not be used to carry out the above method, the cited wording is not restrictive (PCT Guidelines, paragraph III-4.8).

The subject matter of claim 16 is therefore novel (PCT Article 33(2)).

Proceeding from D1, the problem addressed by the present invention has two separate aspects, namely (i) to propose an alternative to the device disclosed in document D1 and (ii) to modify the device disclosed in document D1 such that binding agent is available.

For the following reasons, the solution proposed in claim 16 of the present application cannot be regarded as inventive (PCT Article 33(3)):

- (i) It is generally known to a person skilled in the art that an arrangement in which the sensor units are movable and the surface to be inspected is fixed is equivalent to an arrangement in which the sensor units are fixed and the surface to be inspected is movable, said arrangements being interchangeable if required.

However, a person skilled in the art would also consider the use of a computer for evaluation and control to be a conventional design feature.

- (ii) The provision of a supply of binding agent (in an appropriate container) is an obvious possibility which a person skilled in the art would choose in order to provide binding agent, without thereby being inventive.

- 2.5 Claim 17 is dependent on claim 16 and, thus, also satisfies the requirements of the PCT in respect of novelty. However, dependent claim 17 contains no features which, in combination with the features of claim 16, to which it refers back, meet the PCT requirements for inventive step since the additional features of claim 17 are merely conventional design features.

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3. The subject matter of claims 1-17 is industrially applicable because the invention can be used for enhancing planar materials.
4. Certain observations on the international application:
- 4.1 Claim 1 lacks clarity (PCT Article 6) because it contains two steps referred to as (e).
- 4.2 Owing to the combination of claim 7 with claims 1-5 (PCT Article 6), claim 7 lacks clarity because it relates to a radiation-curable binding agent, yet no radiation-curable binding agent is mentioned until claim 6.
- Similarly, claim 10 also lacks clarity (because of the reference to rawhide defects and manufacturing defects, which are not mentioned in claims 2-9).
- 4.3 Claim 17 lacks clarity (PCT Article 6) because it relates to the same movable unit but does not state which of the plurality of movable units mentioned in claim 16 is intended thereby.
- 4.4 Claim 14 lacks clarity (PCT Article 6) because it relates to a method according to claim 13 but the subject matter of claim 13 concerns planar materials not a method.

It is also advised that a claim should be worded in such a way that it can be understood with the individual words having the meaning they normally have in the relevant art. However, if a special meaning is

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(see page 21, line 11 ff.), this meaning must be clear from the wording of the claim alone (see also PCT Guidelines, paragraph III-4.2).

- 4.5 The inconsistency between the claims and the description gives rise to doubt as to the subject matter for which protection is sought and, in consequence, the claims lack clarity (PCT Article 6).
- 4.6 The features of the device claims 16 and 17 have not been provided with reference signs placed between parentheses (PCT Rule 6.2(b)).
- 4.7 Contrary to PCT Rule 5.1(a)(iv), there is no brief description of the drawings.

ART 34 AMDT

23

New claims

1. A method of upgrading sheet-like materials, comprising the
5 following steps:
- (a) preparation of a material,
 - (b) optoelectronic recording of the surface of the material,
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 - (c) determination of the number of defects,
 - (d) determination of the volume of defects, and
 - 15 (e) repairing defects in the form of cavities using one or more binders.
2. A method as claimed in claim 1, wherein the sheet-like
material is leather.
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3. A method as claimed in claim 1 or 2, wherein one or more
cameras are used in step (b).
4. A method as claimed in any of claims 1 to 3, wherein one or
25 more sensor units, mounted on a movable unit and computer-controlled, are moved over the prepared surface.
5. A method as claimed in any of claims 1 to 4, wherein small
projections of the material are selectively cut off by means
30 of a cutter, which may likewise be mounted on the movable unit.
6. A method as claimed in claims 1 to 5, wherein the binder or
binders is or are selected from physically curable binders,
35 thermally curable binders or binders curable by actinic radiation.
7. A method as claimed in any of claims 1 to 6, wherein
radiation-curable binders are selected from
40 acrylate-containing, vinyl-containing, urethane-containing and epoxide-containing monomers, prepolymers and polymers and mixtures thereof.

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ART 34 AMDT

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8. A method as claimed in any of claims 1 to 7, wherein, in step (e), the binder or binders is or are selectively introduced into the cavities determined in steps (b) to (d) and then cured.
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9. A method as claimed in claims 2 to 8, wherein, in step (e), in each case from 95 to 105% by volume, based on the volume of cavities in the leather and in each case based on the solids content of the cured binder, of binder are introduced
- 10 into the cavities determined and calculated in steps (b) to (d).
10. A method as claimed in any of claims 2 to 9, wherein the binder or binders is or are applied over a large area of the
- 15 leather, then cured selectively in the area of the rawhide defects and/or of the surfacial manufacturing defects and finally the uncured binder is removed.
11. A method as claimed in any of claims 1 to 10, wherein one or
- 20 more additives are added to the binder.
12. A method as claimed in any of claims 2 to 11, wherein leather having coarse surface defects is used as a starting material and, in step (e), thickener is added to the binder and the
- 25 leather is stuccoed with reduced resolution.
13. A sheet-like material obtainable by a method as claimed in claim 1.
- 30 14. A leather having natural grain, obtainable by a method as claimed in any of claims 1 to 13.
15. A leather as claimed in claim 14, obtainable from leather with rawhide damage or surfacial manufacturing defects.
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16. An apparatus for carrying out a method as claimed in any of claims 1 to 5, comprising a computer, a reservoir vessel, a reservoir of binder, one or more sensor units, one or more movable units on which the sensor unit or sensor units is or
- 40 are mounted, optionally one or more light sources, the sensor unit or sensor units, the movable unit or movable units and the optionally present light source or light sources being connected to a computer which controls the components of the apparatus.
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17. An apparatus as claimed in claim 16, further comprising a
nozzle head which is mounted on the same or a further movable
unit, the further movable unit being connected to the
computer and the nozzle head being connected to the computer
and a reservoir of binder, the computer controlling the
nozzle head and the optionally present further movable unit.

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